

Remarks

A. Claims in the Case

Claims 21 and 27 have been amended. Claims 46-48 have been added. Claims 1-48 are pending.

B. 35 U.S.C. §112 Rejections

The Examiner rejected claims 6, 20, and 33 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant respectfully disagrees with these rejections.

The Examiner states: "The term 'less volatile' is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably appraised of the scope of the invention. Since there is no measure between volatile and less volatile, the claims are indefinite (Office Action, page 2)." Applicant respectfully disagrees. As described in Applicant's specification, a first data element which is more volatile than a second data element is more likely to change than the second data element. One example provided in the specification is a price list (e.g., see page 13, line 15 – page 14, line 6). The specification states:

As a common update to this database may be price changes, (i.e., price is statistically likely to be more volatile than description for this example) it follows that such changes are localized to the data in stream P₂, with P₁ being unchanged. (Specification, page 14, lines 4-6).

This example provides that a price is statistically more likely to change (hence is more volatile) than the product descriptions in a price list (which are therefore less volatile than the price). In addition, at least dependent claims 8-11, 22-25, and 35-38 provide specific examples of volatile and less volatile components. Applicant respectfully asserts claims 6, 20, and 33 are allowable for at least the above reasons. Applicant respectfully requests the Examiner withdraw the rejections to the claims.

C. The Claims Are Not Obvious Under 35 U.S.C. § 103(a)

Claims 1-45 were rejected as being obvious over U.S. Patent No. 5,859,971 to Bittinger et al. (hereinafter “Bittinger”) in view of U.S. Patent No. 6,233,589 to Balcha et al. (hereinafter “Balcha”) under 35 U.S.C. § 103(a). Applicant respectfully disagrees with these rejections.

To establish a *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974), MPEP § 2143.03. The cited art does not appear to teach or suggest all of the features of the rejected claims.

Claim 1 recites in part:

differencing at least two of the separate updated version output data streams with a corresponding separate original version output data stream to produce data difference representations.

The combination of Bittinger and Balcha does not appear to teach or suggest at least this feature in combination with the other features of claim 1. Neither Bittinger nor Balcha appear to teach differencing separate streams. The Examiner states: “Bittinger does not explicitly disclose ‘differencing each of the separate updated version output data streams with a corresponding original version output data stream’ (Office Action dated 2/9/05, page 3).” Applicant agrees that Bittinger does not teach at least this feature of claim 1.

The Examiner, however, points to Balcha at col. 8, line 64 – col. 9, line 51 for this teaching. Applicant respectfully notes that Balcha appears to teach: “The differencing mechanism of the present invention determines the locations of identical blocks of data in two versions of the file (Balcha, col. 8, line 67 – col. 9, line 2).” Applicant respectfully asserts that Balcha appears to teach differencing two complete versions of the file (e.g., see Balcha, illustration at the top of col. 9). Balcha does not appear to suggest differencing “separate”

streams resulting from “dividing... the original version” and “dividing... the updated version” as recited in claim 1. Applicant’s specification teaches:

These pre-processor elements may perform arbitrary translations upon the input data stream and split it into one or more **separate** output data streams subject to the constraint that said translated and split data streams can subsequently be recombined and (by addition of reverse translation) used to regenerate the original input data stream. This recombination and reverse translation is accomplished by post-processor elements matched to the pre-processor elements used (as depicted in figures 7 and 10). In this manner the original input data stream comprising the updated version of the data to be differenced is split into a multiplicity of data streams. Each of this multiplicity of data streams may then be independently differenced (using any of the known differencing methods) against the equivalent data stream from the previous version of the data.
(Specification, page 3, lines 6-16).

As noted in the specification, the data streams may be “split” into “separate” data streams for differencing.

The Examiner also points to col. 3, lines 1-10 of Balcha. The Examiner states:

Balcha teaches a file consisting of plurality (sic) of bit patterns that is equivalent to claimed stream. Plurality of bit patterns of same file are compared to determine difference data that is equivalent to claimed difference determination. Comparing bit patterns produce smaller difference data(.) (Office Action mailed 6/14/2005, page 4).

Applicant respectfully notes that the “bit patterns” referenced by the Examiner are “cyclic redundancy check (CRC) values” (see Balcha, col. 3, lines 23-25). Balcha appears to teach comparing the entire base file to the entire modified file using the CRC values calculated for each file. For example, Balcha states:

After the base file is processed, a base signature file exists containing a plurality of CRC values derived from the data contained in the base file. A modified, or revised version of the base file is made, and a revised signature file is created by reading frame size blocks of data from the revised file and generating a revised CRC value for each data block. The revised CRC value is compared to the CRC values in the base file. If the revised CRC value matches a CRC value in the base signature file, the revised CRC value is stored in the revised signature file. A

match is an indication that the block of data matches a block of data in the base file. If no CRC values in the base signature file match the revised CRC bit pattern, a new block of data offset one byte from the previous block of data is read. This process is repeated until a revised CRC bit pattern is generated that matches a bit pattern from the base signature file. The revised bit pattern is then saved to the revised signature file, along with the offset of the block of data from the beginning of the revised file, and the next block of data is read from the revised file, this block of data beginning at the end of the previous block of data. At the end of the process, a revised signature file exists with CRC values that match CRC values in the base signature file, and offsets indicating the location in the revised file of the matching blocks of data. (emphasis added) (Balcha, col. 3, lines 26-49).

Balcha appears to teach comparing the entire base file with the entire modified base file. Applicant respectfully asserts the combination of Bittinger and Balcha does not appear to disclose, teach, or suggest at least “differencing at least two of the separate updated version output data streams with a corresponding separate original version output data stream to produce data difference representations (emphasis added)” as recited in claim 1. Applicant requests removal of the obviousness rejection of claim 1 and the claims dependent thereon.

Claim 14 recites, in part, a similar feature not disclosed, taught, or suggested by Bittinger and Balcha, either separately or in combination. Applicant requests removal of the obviousness rejection of claim 14 and the claims dependent thereon.

Claim 28 recites, in part, a similar feature not disclosed, taught, or suggested by Bittinger and Balcha, either separately or in combination. Applicant requests removal of the obviousness rejection of claim 28 and the claims dependent thereon.

D. Many Of The Dependent Claims Are Separately Patentable

Many of the dependent claims are believed to be independently patentable. For example, claims 6, 20 and 33 each recite, in part: “wherein the dividing separates volatile components of the input data stream from less volatile components of the input data stream.” Applicant submits that this feature, in combination with the features of the independent claims, does not appear to be taught or suggested by the cited art. The Examiner cites Bittinger at col. 10, lines 39-59 for

this teaching, however, Bittinger does not appear to address "the dividing separates volatile components... from less volatile components..." In response to this argument, the Examiner states: "the received data stream is temporarily stored to interrogate components of the data stream to determine differences to update the server cache with the newer information (Office Action dated 2/9/05, page 8)." Applicant respectfully asserts, however, that Bittinger does not appear to address "the dividing separates volatile components... from less volatile components...". For example, as stated in the Applicant's specification:

As a common update to this database may be price changes, (i.e., price is statistically likely to be more volatile than description for this example) it follows that such changes are localized to the data in stream P_2 , with P_1 being unchanged. With known differencing methods being applied to each of P_1 and P_2 separately, the size of the sum of the resulting difference representations may be significantly less than the size of the difference representation obtained by applying the same known differencing method to the original form of the input data (U). (Specification, page 14, lines 4-10).

Applicant respectfully submits the cited references do not appear to disclose, teach, or suggest at least "wherein the dividing separates volatile components of the input data stream from less volatile components of the input data stream" as recited in claims 6, 20 and 33. Applicant respectfully asserts claims 6, 20, and 33 are also allowable for at least these reasons.

As another example, Bittinger and Balcha do not appear to disclose, teach, or suggest, either separately or in combination, "wherein the volatile components comprise branch targets" as recited in claim 8; "wherein the volatile components comprise data addresses" as recited in claim 9; "wherein the less volatile components comprise instruction code" as recited in claim 10; or "wherein the less volatile components comprise immediate data" as recited in claim 11. Applicant respectfully notes that Bittinger and Balcha do not teach dividing a data stream into "volatile components" (e.g., "branch targets" or "data addresses") or "less volatile components" ("instruction code" or "immediate data"). Applicant respectfully asserts claims 8, 9, 10, and 11 are also allowable for at least these reasons. Additionally, claims 22, 23, 24, 25, 35, 36, 37, and 38 include similar features as recited in claims 8, 9, 10, and 11 and, for at least the same reasons cited above, are patentable over the cited art.

Furthermore, neither Bittinger or Balcha disclose, teach, or suggest, at least "wherein dividing the original form of the updated version of the input data stream into separate updated version output data streams includes parsing the input data stream according to a data type of the input data stream (emphasis added)" as recited in claim 42. The Examiner points to Balcha col. 6, lines 31-33 and col. 9, lines 5-14 and states: "...shows blocks of data with data type A, D, and B in the modified stream S' to determine the differences... (Office Action mailed 6/14/2005, page 8)." Applicant respectfully notes Balcha does not appear to teach parsing an input data stream according to data type. For example, Balcha does not identify A, D, and B as having different data types or even parsing A, D, and B according to their data types. Applicant respectfully asserts claim 42 is also allowable for at least the above reasons.

The office action included a rejection of claim 2 in view of the Bittinger and Balcha references. Claim 2 includes the feature of "wherein the data difference representations are smaller than a data difference representation created by differencing the original form of the updated version of the input data stream with the original form of the original input data stream" in combination with the features of claim 1. Applicant respectfully submits that the cited art does not teach or suggest the features in claim 2 in combination with the features of claim 1.

The office action included a rejection of claim 3 in view of the Bittinger and Balcha references. Claim 3 includes the feature of "reconstructing the separate updated version output data streams from the data difference representations and the original version output data streams; and combining the separate updated version output data streams into the original form of the updated version of the input data stream through the use of a post-processor" in combination with the features of claim 1. Applicant respectfully submits that the cited art does not teach or suggest the features in claim 3 in combination with the features of claim 1.

The office action included a rejection of claim 4 in view of the Bittinger and Balcha references. Claim 4 includes the feature of "wherein the original form of the original version of the input data stream is empty" in combination with the features of claim 1. Applicant respectfully submits that the cited art does not teach or suggest the features in claim 4 in

combination with the features of claim 1.

The office action included a rejection of claim 5 in view of the Bittinger and Balcha references. Claim 5 includes the feature of "wherein the pre-processor comprises decompression algorithms" in combination with the features of claim 1. Applicant respectfully submits that the cited art does not teach or suggest the features in claim 5 in combination with the features of claim 1.

The office action included a rejection of claim 7 in view of the Bittinger and Balcha references. Claim 7 includes the feature of "wherein the input data stream is executable code" in combination with the features of claim 1. Applicant respectfully submits that the cited art does not teach or suggest the features in claim 7 in combination with the features of claim 1.

The office action included a rejection of claim 12 in view of the Bittinger and Balcha references. Claim 12 includes the feature of "packaging the data difference representations into a single data stream; compressing the single data stream; and storing the single data stream" in combination with the features of claim 1. Applicant respectfully submits that the cited art does not teach or suggest the features in claim 12 in combination with the features of claim 1.

The office action included a rejection of claim 13 in view of the Bittinger and Balcha references. Claim 13 includes the feature of "transmitting the single data stream; uncompressing the single data stream; and unpackaging the single data stream into the data difference representations" in combination with the features of claim 1. Applicant respectfully submits that the cited art does not teach or suggest the features in claim 13 in combination with the features of claim 1.

The office action included a rejection of claim 15 in view of the Bittinger and Balcha references. Claim 15 includes the feature of "wherein the data difference representations are smaller than a data difference representation created by differencing the original form of the updated version of the input data stream with the original form of the original input data stream" in combination with the features of claim 14. Applicant respectfully submits that the cited art

does not teach or suggest the features in claim 15 in combination with the features of claim 14.

The office action included a rejection of claim 16 in view of the Bittinger and Balcha references. Claim 16 includes the feature of "a second computer system coupled to the network;

a system memory coupled to the second computer system, wherein the system memory stores one or more computer programs executable by the second computer system; wherein the pre-processor is located in the first computer system; and wherein the post-processor is located in the second computer system" in combination with the features of claim 14. Applicant respectfully submits that the cited art does not teach or suggest the features in claim 16 in combination with the features of claim 14.

The office action included a rejection of claim 17 in view of the Bittinger and Balcha references. Claim 17 includes the feature of "reconstruct the separate updated version output data streams from the data difference representations and the original version output data streams; and combine the separate updated version output data streams into the original form of the updated version of the input data stream through the use of a post-processor" in combination with the features of claim 14. Applicant respectfully submits that the cited art does not teach or suggest the features in claim 17 in combination with the features of claim 14.

The office action included a rejection of claim 18 in view of the Bittinger and Balcha references. Claim 18 includes the feature of "wherein the original form of the original version of the input data stream is empty" in combination with the features of claim 14. Applicant respectfully submits that the cited art does not teach or suggest the features in claim 18 in combination with the features of claim 14.

The office action included a rejection of claim 19 in view of the Bittinger and Balcha references. Claim 19 includes the feature of "wherein the pre-processor comprises decompression algorithms" in combination with the features of claim 14. Applicant respectfully submits that the cited art does not teach or suggest the features in claim 19 in combination with the features of claim 14.

The office action included a rejection of claim 21 in view of the Bittinger and Balcha references. Claim 21 includes the feature of "wherein the input data stream is executable code" in combination with the features of claim 14. Applicant respectfully submits that the cited art does not teach or suggest the features in claim 21 in combination with the features of claim 14.

The office action included a rejection of claim 26 in view of the Bittinger and Balcha references. Claim 26 includes the feature of "wherein the computer programs are further executable to: package the data difference representations into a single data stream; compress the single data stream; and store the single data stream on a memory medium coupled to the first computer system" in combination with the features of claim 14. Applicant respectfully submits that the cited art does not teach or suggest the features in claim 26 in combination with the features of claim 14.

The office action included a rejection of claim 27 in view of the Bittinger and Balcha references. Claim 27 includes the feature of "transmit the single data stream from the memory medium coupled to the first computer system to a second computer system over a computer system network; uncompress the single data stream; and unpack the single data stream into the data difference representations" in combination with the features of claim 14. Applicant respectfully submits that the cited art does not teach or suggest the features in claim 27 in combination with the features of claim 14.

The office action included a rejection of claim 29 in view of the Bittinger and Balcha references. Claim 29 includes the feature of "wherein the data difference representations are smaller than a data difference representation created by differencing the original form of the updated version of the input data stream with the original form of the original input data stream" in combination with the features of claim 28. Applicant respectfully submits that the cited art does not teach or suggest the features in claim 29 in combination with the features of claim 28.

The office action included a rejection of claim 30 in view of the Bittinger and Balcha references. Claim 30 includes the feature of "wherein the program instructions are further executable to implement: reconstructing the separate updated version output data streams from

the data difference representations and the original version output data streams; and combining the separate updated version output data streams into the original form of the updated version of the input data stream through the use of a post-processor" in combination with the features of claim 28. Applicant respectfully submits that the cited art does not teach or suggest the features in claim 30 in combination with the features of claim 28.

The office action included a rejection of claim 31 in view of the Bittinger and Balcha references. Claim 31 includes the feature of "wherein the original form of the original version of the input data stream is empty" in combination with the features of claim 28. Applicant respectfully submits that the cited art does not teach or suggest the features in claim 31 in combination with the features of claim 28.

The office action included a rejection of claim 32 in view of the Bittinger and Balcha references. Claim 32 includes the feature of "wherein the pre-processor comprises decompression algorithms" in combination with the features of claim 28. Applicant respectfully submits that the cited art does not teach or suggest the features in claim 32 in combination with the features of claim 28.

The office action included a rejection of claim 34 in view of the Bittinger and Balcha references. Claim 34 includes the feature of "wherein the input data stream is executable code" in combination with the features of claim 28. Applicant respectfully submits that the cited art does not teach or suggest the features in claim 34 in combination with the features of claim 28.

The office action included a rejection of claim 39 in view of the Bittinger and Balcha references. Claim 39 includes the feature of "wherein the program instructions are further executable to implement: packaging the data difference representations into a single data stream; compressing the single data stream; and storing the single data stream on a memory medium coupled to a first computer system" in combination with the features of claim 28. Applicant respectfully submits that the cited art does not teach or suggest the features in claim 39 in combination with the features of claim 28.

The office action included a rejection of claim 40 in view of the Bittinger and Balcha references. Claim 40 includes the feature of "wherein the program instructions are further executable to implement: transmitting the single data stream from the memory medium coupled to the first computer system to a second computer system over a computer system network; uncompressing the single data stream; and unpackaging the single data stream into the data difference representations" in combination with the features of claim 28. Applicant respectfully submits that the cited art does not teach or suggest the features in claim 40 in combination with the features of claim 28.

The office action included a rejection of claim 41 in view of the Bittinger and Balcha references. Claim 41 includes the feature of "wherein the carrier medium is a memory medium" in combination with the features of claim 28. Applicant respectfully submits that the cited art does not teach or suggest the features in claim 41 in combination with the features of claim 28.

The office action included a rejection of claim 43 in view of the Bittinger and Balcha references. Claim 43 includes the feature of "wherein dividing the original form of the updated version of the input data stream into separate updated version output data streams includes parsing the input data stream according to a data type of the input data stream" in combination with the features of claim 28. Applicant respectfully submits that the cited art does not teach or suggest the features in claim 43 in combination with the features of claim 28.

The office action included a rejection of claim 44 in view of the Bittinger and Balcha references. Claim 44 includes the feature of "wherein dividing the original form of the updated version of the input data stream into separate updated version output data streams includes parsing the input data stream according to a data type of the input data stream" in combination with the features of claim 28. Applicant respectfully submits that the cited art does not teach or suggest the features in claim 44 in combination with the features of claim 28.

The office action included a rejection of claim 45 in view of the Bittinger and Balcha references. Claim 45 includes the feature of "wherein differencing at least two of the separate updated version output data streams with a corresponding separate original version output data

stream to produce data difference representations comprises differencing each of the separate updated version output data streams with a corresponding separate original version output data stream to produce data difference representations" in combination with the features of claim 1. Applicant respectfully submits that the cited art does not teach or suggest the features in claim 45 in combination with the features of claim 1.

E. New Claim

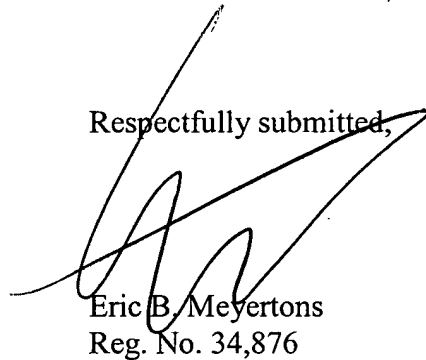
Applicant respectfully asserts new claims 46-48 are also allowable. The cited art does not appear to disclose, teach, or suggest, at least, "wherein the volatile components are substantially dynamically changing components and wherein the less volatile components are substantially static components" as recited in claim 46, "wherein the dividing separates first components of the input data stream from second components of the input data stream, and wherein the first components are components of the input data stream that are statistically more likely to have changed between the original version of the input data stream and the updated version of the input data stream than the second components" as recited in claim 47, or "wherein a pattern template is used to separate the first components and the second components" as recited in claim 48.

F. Additional Comments

Based on the above, Applicant submits that all of the claims are in condition for allowance. Favorable reconsideration is respectfully requested.

If an extension of time is required, Applicant hereby requests the appropriate extension of time. A fee authorization is enclosed for the excess claims. If any fees are omitted, please appropriately charge those fees to Meyertons, Hood, Kivlin, Kowert & Goetzel Deposit Account No. 50-1505/5543-00301/EBM.

Respectfully submitted,



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